In the claims:

1. (Currently amended) A method of making nanoscale catalyst patterns for an ion exchange membrane, comprising:

providing a mold having a top surface;

establishing at least one nanoscale masking element on at least a portion of the top surface;

etching exposed portions of the mold to form at least one nanoscale protrusion therein;

~~i) providing a malleable ion exchange membrane having a top surface;~~

~~ii) providing a mold having one or more nanoscale protusions;~~

~~iii)~~ pressing the at least one nanoscale protrusion ~~protrusions~~ into a top surface of the membrane to form ~~one or more~~ at least one nanoscale recess therein ~~recesses in the membrane, each~~ the at least one recess having a bottom and side walls, wherein the side walls extend from the top surface of the membrane to the bottom of the at least one recess~~, each recess further including a lateral dimension ranging from about 1 nm to about 100 nm~~; and

~~iv)~~ depositing a layer of catalytic material on the top surface of the membrane and the bottom of the at least one recess.

2. (Previously presented) The method of claim 1 wherein the membrane comprises a polymer.

3. (Previously presented) The method of claim 1 wherein the membrane is an ion conductive membrane.

4. (Previously presented) The method of claim 1 wherein the membrane is a polymer electrolyte membrane.

5. (Currently amended) The method of claim 1[[,]] wherein the membrane comprises a perfluorosulfonic acid polymer electrolyte.

6. (Currently amended) The method of claim 1 wherein the mold comprises a substrate and a molding layer including an array of ~~protruding features~~ nanoscale protrusions formed therein, each of the nanoscale protrusions having nanoscale dimensions.

7. (Currently amended) The method of claim 1 wherein the at least one nanoscale protrusion has ~~protrusions each have~~ a lateral dimension ranging from about 1 nm to about 100 nm.

8. (Currently amended) The method of claim 1 wherein the at least one nanoscale protrusion has ~~protrusions each have~~ a height ranging from 1 nm to about 100 μm.

9. (Currently amended) The method of claim 1 wherein the at least one nanoscale protrusion has ~~protrusions each have~~ the shape of a pillar.

10. (Currently amended) The method of claim 1 wherein the mold includes an array of nanoscale protrusions, and wherein the nanoscale protrusions form a regular pattern.

11. (Currently amended) The method of claim 1 wherein the at least one nanoscale recess has ~~recesses have~~ the obverse shape of the at least one nanoscale protrusion ~~protrusions~~.

12. (Currently amended) The method of claim 1 wherein the bottom of the at least one nanoscale recess is parallel to the top surface of the membrane.

13. (Currently amended) The method of claim 1 wherein the side walls of the at least one recess are perpendicular to the bottom of the at least one recess and the top surface of the membrane.

14. (Canceled)

15. (Previously presented) The method of claim 1 wherein the side walls remain substantially free of catalytic material.

16. (Previously presented) The method of claim 1 wherein the catalytic material is also an electrode.

17. (Previously presented) The method of claim 1 wherein the catalytic material comprises a metal.

18. (Previously presented) The method of claim 17 wherein the metal is platinum.

19 – 33. (Canceled)

34. (Currently amended) A method of making nanoscale catalyst patterns for an ion exchange membrane, comprising:

providing a malleable ion exchange membrane having a top surface;

providing a mold having ~~one or more~~ at least one nanoscale protrusion ~~protrusions~~;

imprinting the at least one nanoscale protrusion ~~protrusions~~ into the membrane to form ~~one or more~~ at least one nanoscale recess ~~recesses~~ in the membrane, ~~each~~ the at least one recess having a bottom and side walls, wherein the

side walls extend from the top surface of the membrane to the bottom of the at least one recess; and

depositing a layer of catalytic material on the top surface of the membrane and the bottom of the at least one recess.

35. (Previously presented) The method of claim 34 wherein the membrane comprises a polymer.

36. (Previously presented) The method of claim 34 wherein the membrane is an ion conductive membrane or a polymer electrolyte membrane.

37. (Previously presented) The method of claim 34 wherein the membrane comprises a perfluorosulfonic acid polymer electrolyte.

38. (Previously presented) The method of claim 34 wherein the mold comprises a substrate and a molding layer including an array of protruding features having nanoscale dimensions.

39. (Currently amended) The method of claim 34 wherein the at least one nanoscale protrusion includes ~~protrusions include~~ a lateral dimension ranging from about 1 nm to about 100 μm, and a height ranging from about 1 nm to about 100 μm.

40. (Currently amended) The method of claim 34 wherein the at least one nanoscale protrusion has ~~protrusions each have~~ the shape of a pillar.

41. (Currently amended) The method of claim 34 wherein the mold includes ~~said~~ an array of nanoscale protrusions that form a regular pattern.

42. (Currently amended) The method of claim 34 wherein ~~said~~ the at least one nanoscale recess has ~~recesses have~~ the obverse shape of the at least one nanoscale protrusion ~~protrusions~~.

43. (Currently amended) The method of claim 34 wherein the bottom of the at least one recess is parallel to the top surface of the membrane, and the side walls of the at least one recess are perpendicular to the bottom of the at least one recess and the top surface of the membrane.

44. (Currently amended) The method of claim 34 wherein the side walls of the at least one recess ~~recesses each~~ have a depth ranging from about 1 nm to about 100 μm.

45. (Previously presented) The method of claim 34 wherein the side walls remain substantially free of catalytic material.

46. (Previously presented) The method of claim 34 wherein the catalytic material is also an electrode.

47. (Previously presented) The method of claim 34 wherein the catalytic material comprises a metal including platinum.

48. (Currently amended) The method of claim 34 wherein ~~each~~ the at least one recess has a lateral dimension ranging from about 1 nm to about 100 nm.